WITCH and EU Climate Policies

Fit for 55, 2040 target, …

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An overview of European Climate Targets for 2030

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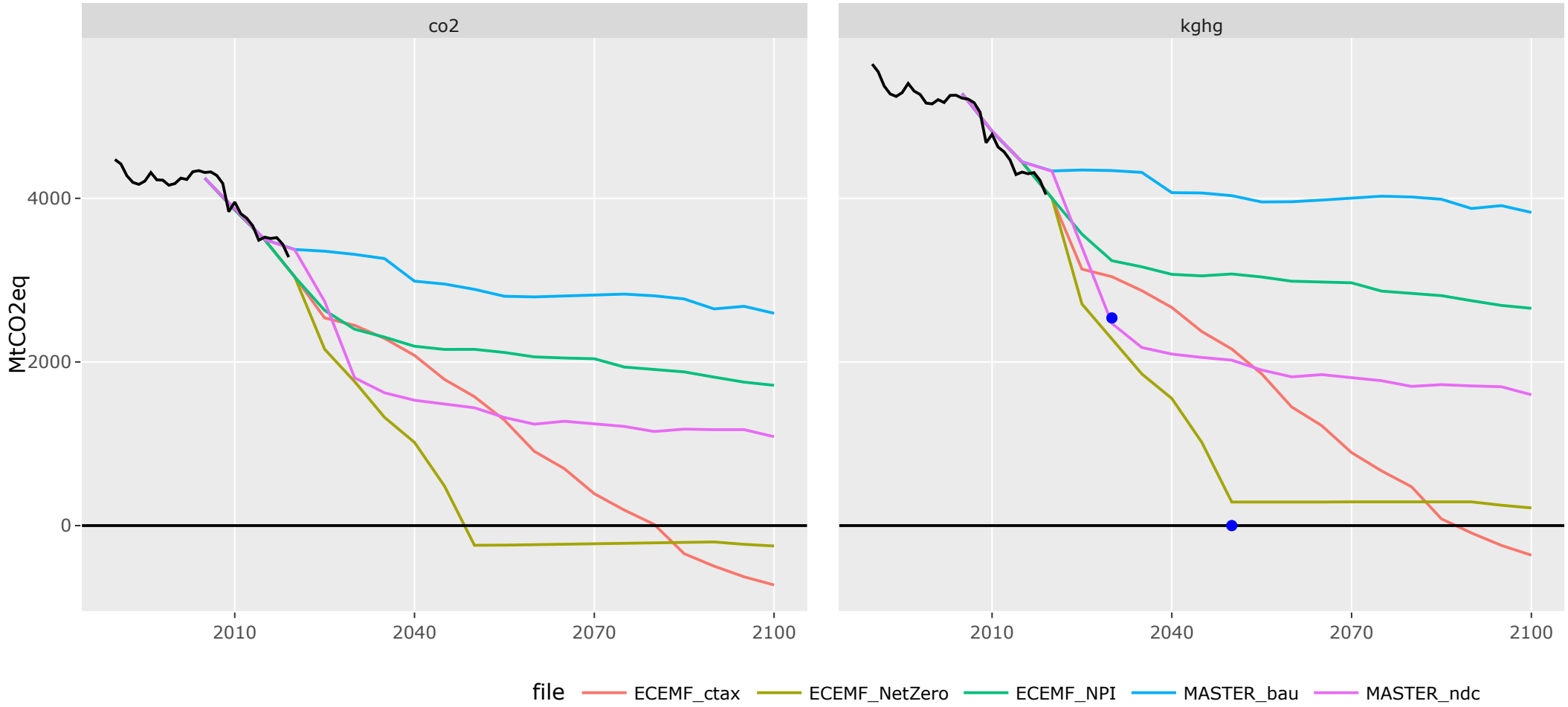
1. Emission Target 2030: -40%(1990)*
2. Energy Efficiency Directive: -32.5% (Ref)
3. Renewables Target in FEN: 32% (Total)
4. Renewables Target in Electricity: % (Total)
5. Renewables Share in Transportation: 9%
6. Heating and Cooling by REN:
7. Social Climate Fund 65bln. EUR

1. Emission Target 2030: -40%(1990)*
2. Energy Efficiency Target: -36%(FEN) / -39%(PES) (Ref)
3. Renewables Target in FEN: 40% / 45% (REPowerEU)
4. Renewables Target in Electricity: 65% / 69% (REPowerEU)
5. Renewables Share in Transportation: 29%
6. Heating and Cooling by REN:

[*] Always indicating the reference where applicable

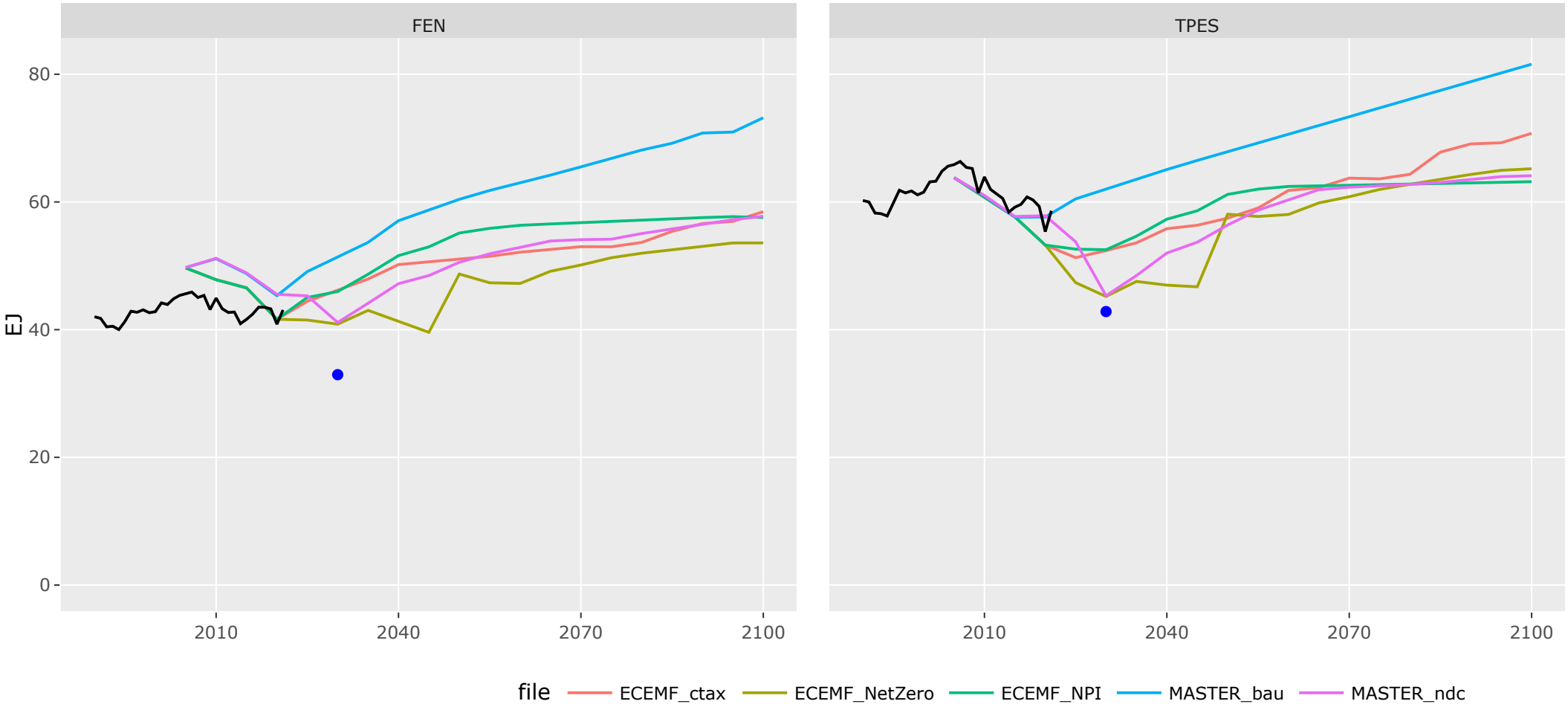
Scenarios

Emissions Target



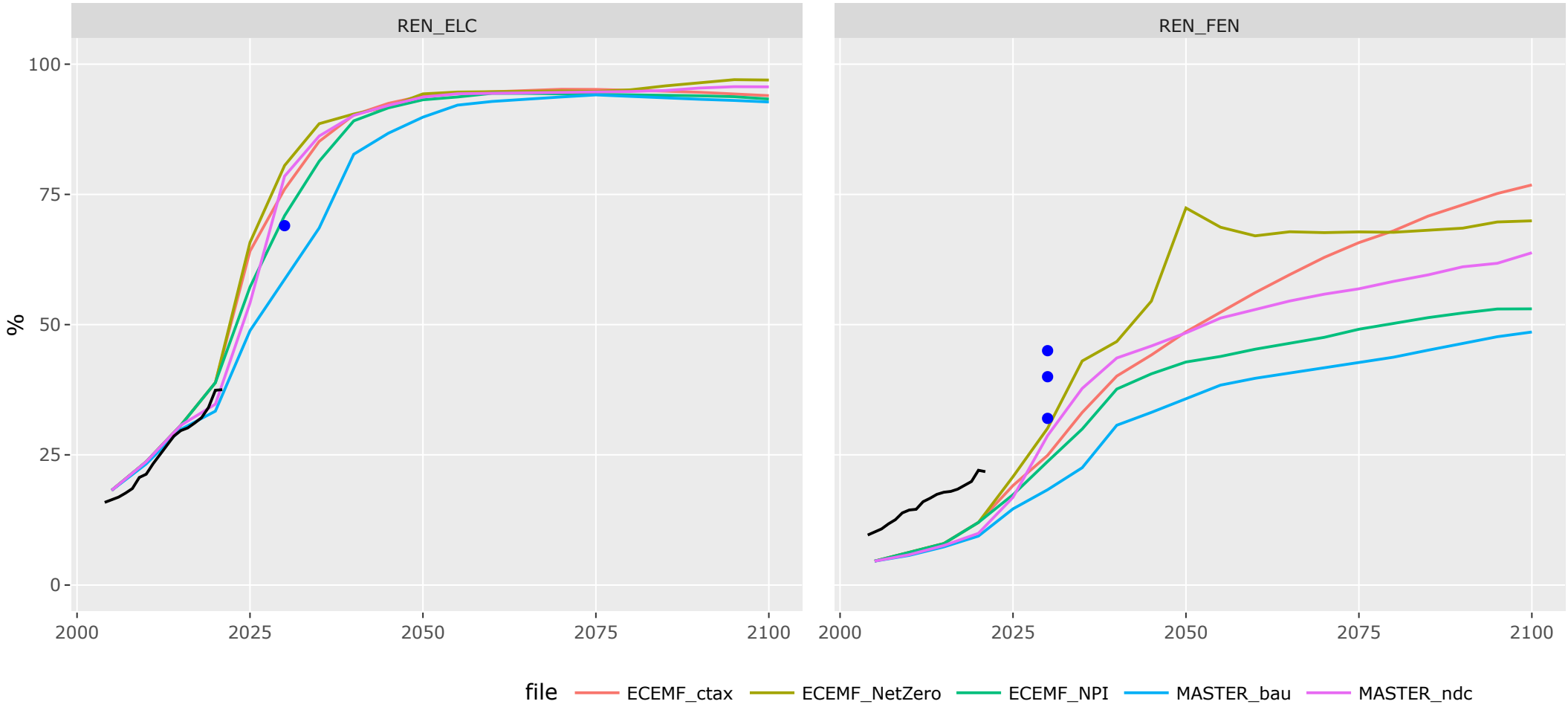
Energy Efficiency Directive

- Demand for Total Final/Primary Energy

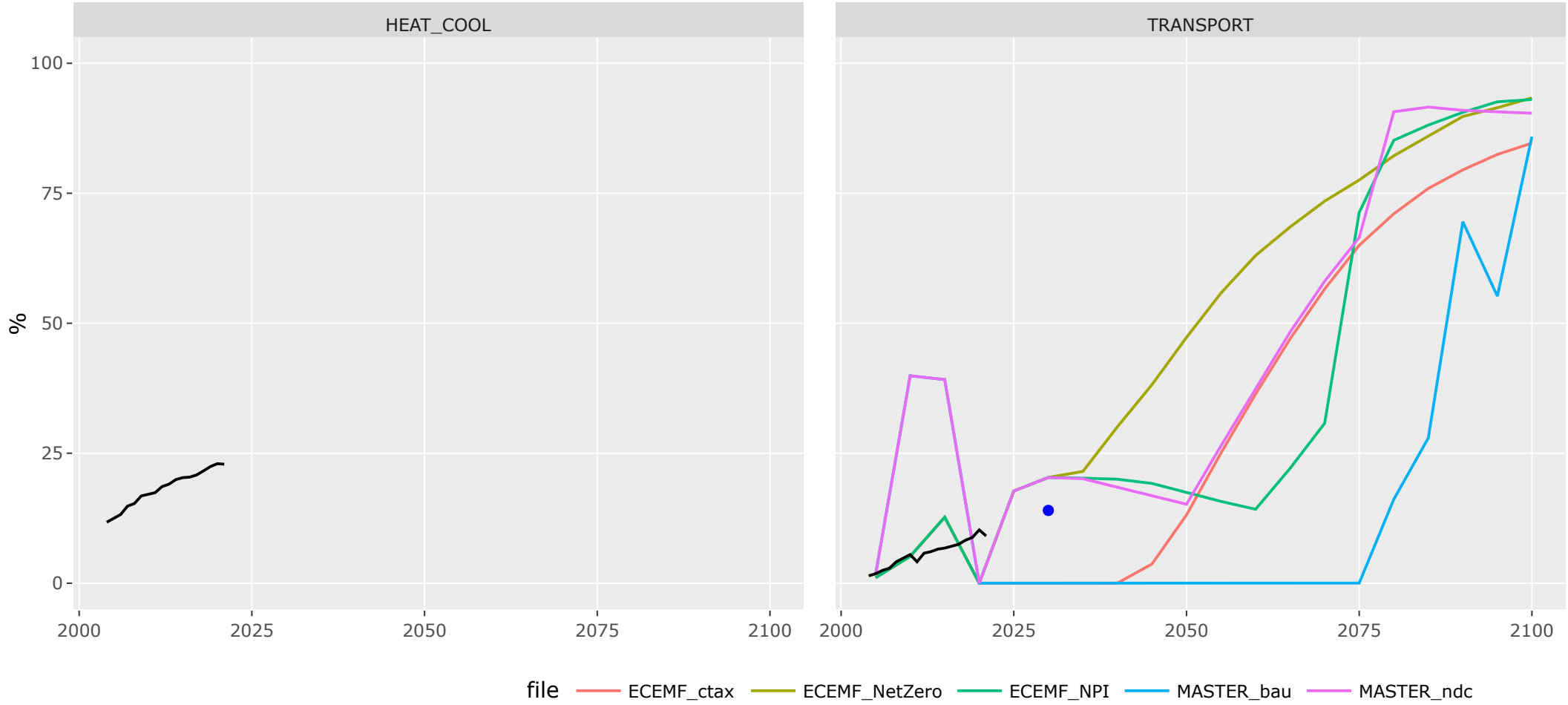


Renewable Energy

- Share of Renewables in FEN and Electricity



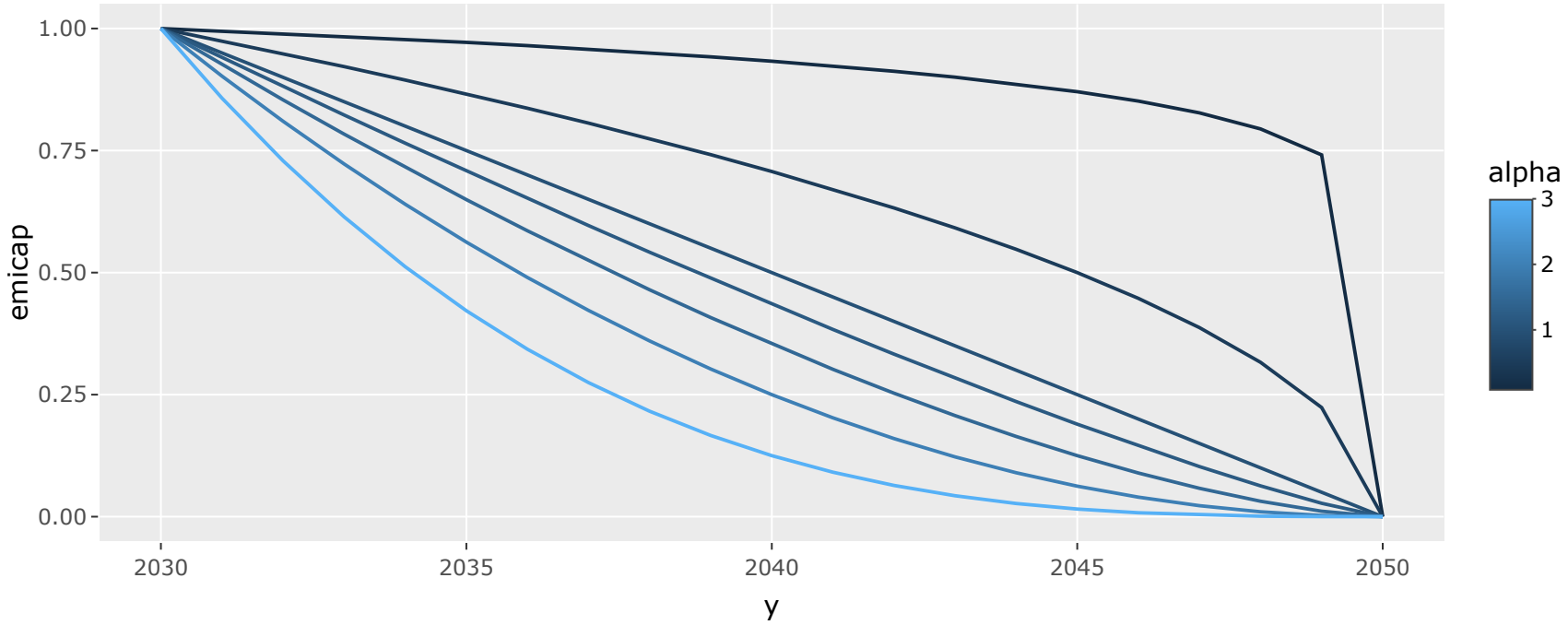
Sectoral Renewable Shares



How fast to reach net zero?

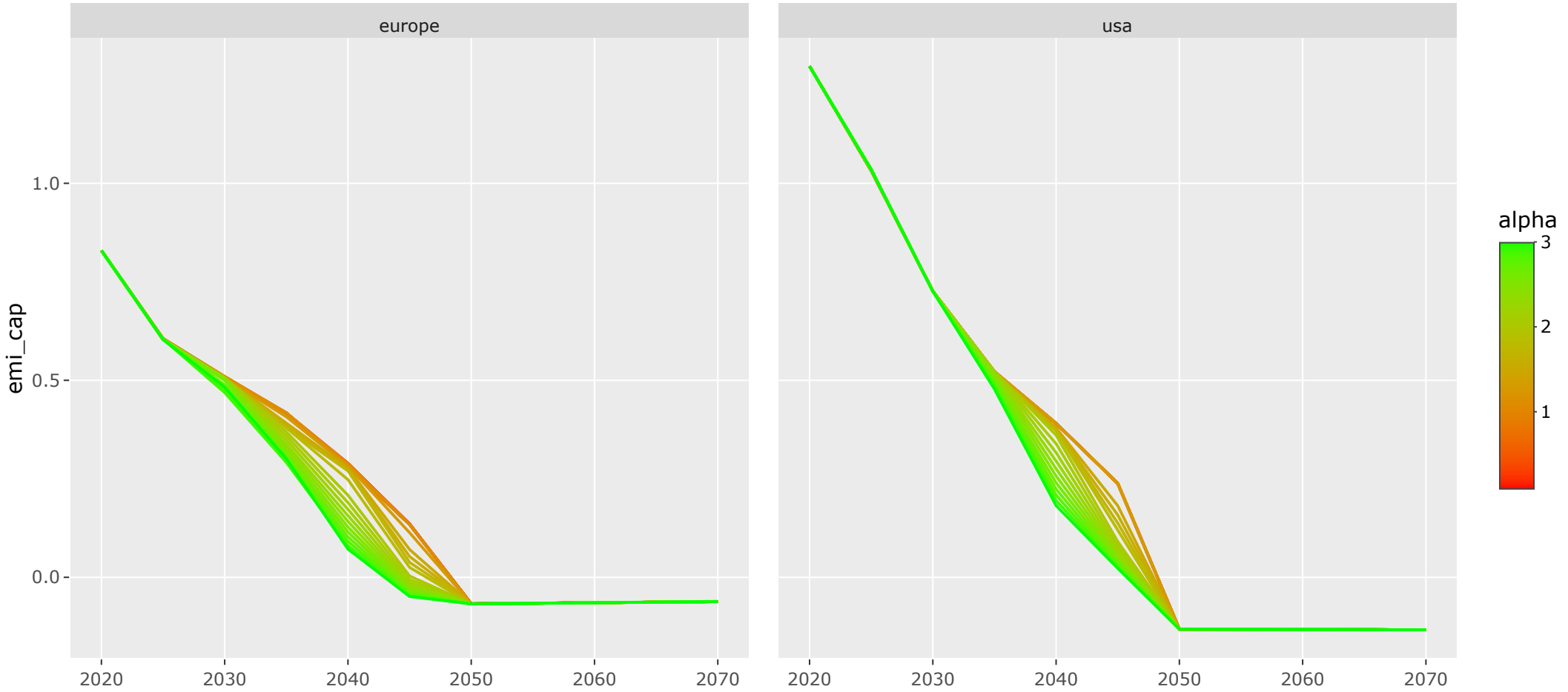
- So far, pledges implemented as **linear** trends $(\alpha = 1)$.

$$emicap_y = (E_{2030} - E_{NZY})\left(1 - \frac{y - 2030}{NZY - 2030}\right)^{\alpha}$$



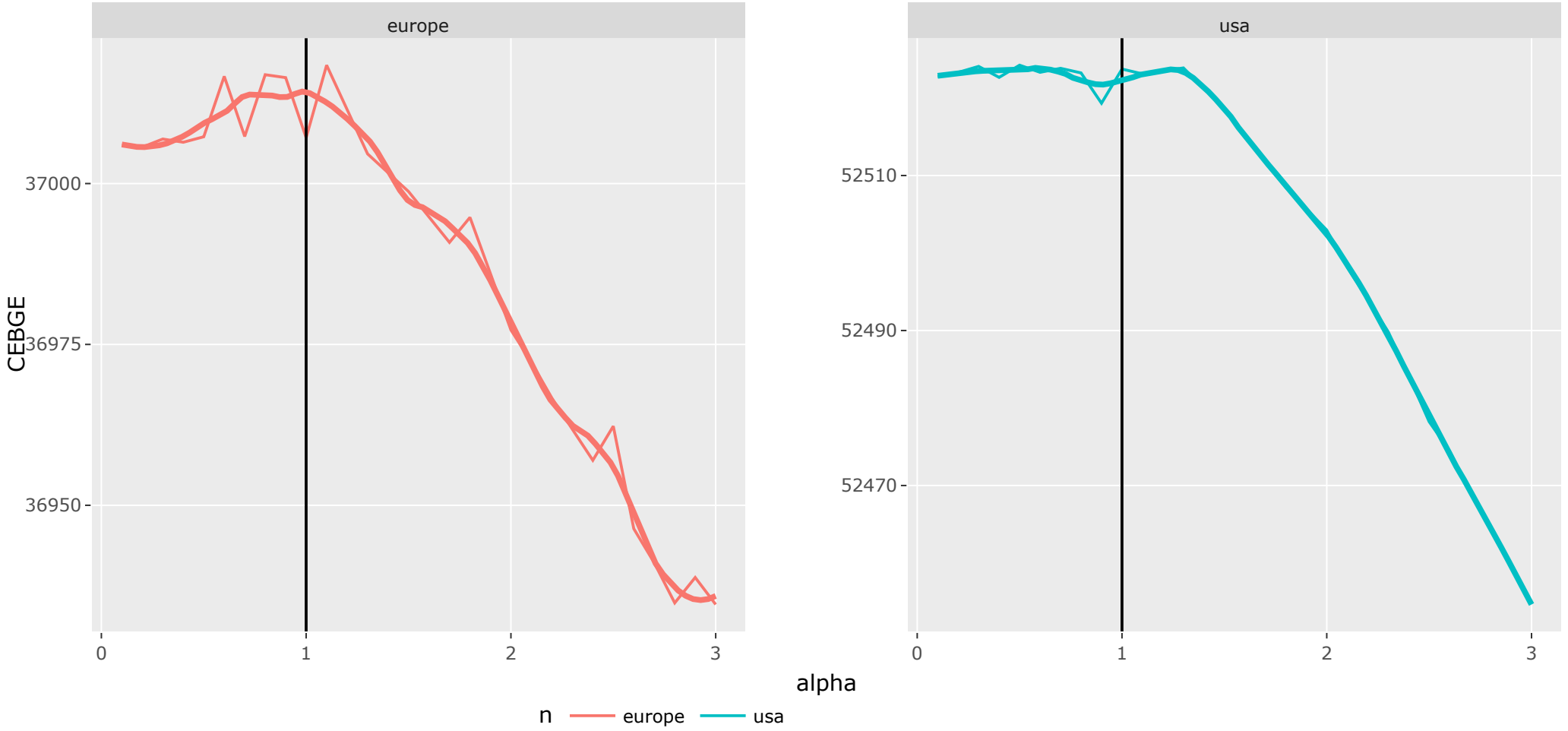
How fast to reach net zero?

- Using `pol_lts.gms` in WITCH master (uses emi_cap then converts to tax, additional constraints)



How fast to reach net zero?

- Which speed is optimal?



Conclusions

- Overall Current Policies, NDC, and Pledges work fairly well
- Final Energy reporting some fixes required
- Sectoral reporting a starting point but endogenous modelling next step
- Net Zero transition we could say something about it
- slighly convex shape ($\alpha=1.2-1.3$) seems reasonable
- ...